CONTENTS

Volume 26, Issue Nos 1–15

International Journal of ENERGY RESEARCH

VOLUME 26, ISSUE No. 1 — January 2002

A corresponding states predictive viscosity model based on a new scaling parameter: application to hydrocarbons, halocarbons and mixtures: G. Scalabrin, G. Cristofoli and M. Grigiante 1

Financial costs and environment impact optimization of the energy supply systems: L. I. González-Monroy and A. Córdoba 27

Magnetic field of high-phase order and compact transmission lines: H. M. Ismail 45

Fundamental study on biomass-fuelled ceramic fuel cell: B. Zhu, X. Y. Bai, G. X. Chen, W. M. Yi and M. Bursell 57

Neural networks in forecasting electrical energy consumption: univariate and multivariate approaches: G. E. Nasr, E. A. Badr and M. R. Younes 67

Augmented control strategies for radiant floor heating systems: M. Zaheer-uddin, Z. L. Zhang and S. H. Cho 79

VOLUME 26, ISSUE No. 2 — February 2002

A 3-D Lagrangian particle model for the atmospheric dispersion of toxic pollutants: S. Raza, R. Avila and J. Cervantes 93

Performance analysis of a solar cooker in Turkey: G. Oturanç, N. Özbalta and A. Güngör 105

The effect of inlet subcooling on two-phase flow instabilities in a horizontal pipe system with augmented surfaces: M. Yılmaz, Ö. Çomaklı and S. Karslı 113

Rules-of-thumb of implementing short electric band heaters (length to diameter ratio <1.5) for external heating of pipe flows: X. D. Chen, G. M. Ai and G. G. Duffy 133

Enhancement of the cubic cell soil thermal conductivity model: V. R. Tarnawski and F. Gori 143

Encapsulated phase change materials for thermal energy storage: experiments and simulation: M. N. A. Hawlader, M. S. Uddin and H. J. Zhu 159

Effect of operating parameters on sulphur capture in a pressurized circulating fluidized bed combustor: S. Boskovic, B. V. Reddy and P. Basu 173

VOLUME 26, ISSUE No. 3 — 10 March 2002

Dynamic performance assessment of an isolated wind–diesel power system with superconducting magnetic energy storage unit under turbulent wind and load disturbances: M. D. Mufti, R. Balasubramanian and S. C. Tripathy 185

Evaluation of solar fraction (F_n) for the north wall of a controlled environment greenhouse: an experimental validation: G. N. Tiwari, M. Din, N. S. L. Srivastava, D. Jain and M. S. Sodha 203

Performance characteristics of a magnetic Stirling cooler: F. Wu, C. Wu, L. Chen and F. Sun 217

NO emission characteristics in counterflow diffusion flame of blended fuel of H_2/CO_2/Ar: J. Park, K.-H. Lee and K. Lee 229

Development of a new drying correlation for practical applications: I. Dincer, M. M. Hussain, B. S. Yilbas and A. Z. Sahin 245

Entropy analysis of conjugate heating in a pipe flow: S. J. Hyder and B. S. Yilbas 253

Energy analysis of Saudi Arabia: I. Dincer and B. Al-Rashed 263

VOLUME 26, ISSUE No. 4 25 March 2002

Effects of octane number on exhaust emissions of a spark ignition engine: A. A. Al-Farayedhi 279

Heat transfer reduction at the separation point on a spinning sphere in mixed convection: A. Öztürk and M. C. Ece 291

Heat transfer from a plate impinging swirl jet: K. Bilen, K. Bakirci, S. Yapici and T. Yavuz 305

Thermal performance analysis of a tube finned surface: K. Bilen, U. Akyol and S. Yapici 321

Support vector machines for short term electrical load forecasting: Md. Mohandes 335

Numerical and experimental investigation of melting of ice involving natural convection: R. Kahraman 347

An optimum design on the triple-glazed exhaust airflow window: M.-H. Kim and W.-J. Yang 355

VOLUME 26, ISSUE No. 5 April 2002

Similitude criteria for free convective heat and mass transfer: J. Padet and T. de Lorenzo 365

A spreadsheet solution of transient conduction in composite fins: E. M. A. Mokheimer, M. A. Antar, J. Farooqi and S. M. Zubair 383

Simplified solution of developing laminar forced flow between parallel plates: E. M. A. Mokheimer .. 399

Comparison of solar radiation correlations for Izmir, Turkey: K. Ulgen and A. Hepbasli 413

Analysing industrial energy use: a case study of the Swedish forest industry: I. Nyström and D. W. Cornland 431

VOLUME 26, ISSUE No. 6 May 2002

Dilution effects of air stream on NO emission characteristics in H_2/Ar counterflow diffusion flame: J. Park, K.-H. Lee and K.-S. Kim 455

Modelling the impact of energy taxation: J. Sjödin 475

Determination of Weibull parameters for wind energy analysis of Izmir, Turkey: K. Ulgen and A. Hepbasli 495

Energy analysis of fluidized-bed drying of large wet particles: S. Syahrul, F. Hamdullahpur and I. Dincer 507

Analysis of a heat pump with solid desiccant tube bank: T. Kiatsiriroat and W. Tachajapong 527

VOLUME 26, ISSUE No. 7 10 June 2002

Special Issue
Energy Conversion, Conservation and Environmental Impact

Foreword 543
Fundamentals of energy analysis, entropy generation minimization, and the generation of flow architecture: A. Bejan 545
Thermal energy storage systems as a key technology in energy conservation: I. Dincer 567
Application of the Direct Method to irreversible stirling cycles with finite speed: S. Petrescu, M. Costea, C. Harman and T. Florea 589
Heat losses through building walls with closed, open and deformable cavities: S. Lorente 611
Predicting the performance of air cyclones: D. B. Ingham and L. Ma 633
Depletion of ozone and the greenhouse effect: a new goal for the design of inverse cycle machines: M. Feidt 653
Energy conservation through heat transfer enhancement techniques: V. Zimparov 675
Engineering and economic optimization of energy production: I. C. Ionita 697

VOLUME 26, ISSUE No. 8 25 June 2002

On energetic, exergetic and environmental aspects of drying systems: I. Dincer 717
Optimum packing factor of stack in a standing-wave thermoacoustic prime mover: L. Qui, G. Chen and N. Jiang 729
Application of possibility theory in the life-cycle inventory assessment of biofuels: R. R. Tan, A. B. Culaba and M. R. I. Purves 737
Theoretical and experimental comparison of the performance of a single-stage heat transformer operating with water/lithium bromide and water/Carrol™: W. Rivera, R. J. Romero, M. J. Cardoso, J. Aguillón and R. Best 747
Exergy analysis of multistage cascade refrigeration cycle used for natural gas liquefaction: M. Kanoğlu 763
Thermodynamic study of multistage absorption cycles using low-temperature heat: M. Venegas, M. Izquierdo, M. de Vega and A. Lecuona 775

VOLUME 26, ISSUE No. 9 July 2002

Closed door moisture transport in refrigerator/freezers: M. A. Stein, C. Inan, C. Bullard and T. Newell 793
Estimation of solar radiation parameters for Izmir, Turkey: K. Ulgen and A. Hepbasli 807
Operational results of an intermittent absorption cooling unit: A. R. El-Ghalban 825
Energy conservation in compressed-air systems: D. Kaya, P. Phelan, D. Chau and H. I. Sarac 837
Energy and entropy analysis in a square cavity with protruding body: effects of protruding body aspect ratio: B. S. Yilbas, S. Z. Shuja and M. O. Iqbal 851

VOLUME 26, ISSUE No. 10 August 2002

Design optimization of heat exchangers with high-viscosity fluids: S. M. Bagalagel and A. Z. Sahin .. 867

Cooling load density characteristics of an endoreversible variable-temperature heat reservoir air refrigerator: S. Zhou, L. Chen, F. Sun and C. Wu 881

On the effect of the local turbulence scales on the mixing rate of diffusion flames: assessment of two different combustion models: J. Lopes, V. Semião and M. da Graça Carvalho 893

A fibre-mat catalytic burner for the heating system of PVC tiles: Y. S. Seo, S. J. Cho, K. S. Song and S. K. Kang 921

Modelling of electric energy consumption in the AC electric arc funace: Ü. Çamdalı and M. Tunç 935

VOLUME 26, ISSUE No. 11 September 2002

Experiments on charging and discharging of spherical thermal (ice) storage elements: K. T. Adref and I. W. Eames 949

Friction effect on the characteristic performance of Diesel engines: L. Chen, J. Lin, J. Luo, F. Sun and C. Wu 965

Investigation of three-dimensional heat and mass transfer in a metal hydride reactor: M. D. Mat, Y. Kaplan and K. Aldas 973

Geometric features of the flame propagation process for an SI engine having dual-ignition system: A. Bilgin 987

Performance study of a heat pump dryer system for speciality crops—Part 1: Development of a simulation model: P. K. Adapa, G. J. Schoenau and S. Sokhansanj 1001

Performance study of a heat pump dryer system for speciality crops—Part 2: Model verification: P. K. Adapa, G. J. Schoenau and S. Sokhansanj 1021

VOLUME 26, ISSUE No. 12 10 October 2002

Investigation of heat and mass transfer in a gauze-type structured packing liquid desiccant dehumidifier: P. Gandhidasan, A. A. Al-Farayedhi and M. A. Antar 1035

Reignition phenomenon of high-speed hydrogen jet diffusion flame: S. Torii, B.-K. Jung and T. Yano 1045

Modelling of an ethanol–water distillation column assisted by an external heat pump: S. B. M. Oliveira, J. A. R. Parise and R. P. Marques 1055

Thermal and chemical contributions of added H_2O and CO_2 to major flame structures and NO emission characteristics in H_2/N_2 laminar diffusion flame: S.-G. Kim, J. Park and S.-I. Keel 1073

Optimum Stirling engine geometry: J. R. Senft 1087

On cost effective technical measures to avoid environmental damage of regional energy systems: A. Carlson 1103

ANNOUNCEMENTS 1117

VOLUME 26, ISSUE No. 13 25 October 2002

Performance evaluation of a vertical ground-source heat pump system in Izmir, Turkey: A. Hepbasli . 1121

Chemical effect of diluents on flame structure and NO emission characteristic in methane–air counter-flow diffusion flame: J. Park, S.-G. Kim, K.-M. Lee and T. K. Kim 1141

Simplification of analytical models and incorporation with CFD for the performance prediction of closed-wet cooling towers: A. Hasan and G. Gan 1161

The evaluation of small cogeneration for residential heating: K. R. Voorspools and W. D. D'haeseleer 1175

Optimization of emissions from fluidised bed combustion of coal, biofuel and waste: B. Leckner and A. Lyngfelt 1191

VOLUME 26, ISSUE No. 14 November 2002

Influence of temperature and steam on the products from the flash pyrolysis of Jordan oil shale: J. M. Nazzal and P. T. Williams 1207

An advanced model to assess fouling and slagging in coal fired boilers: M. Xu, X. He, J. L. T. Azevedo and M. G. Carvalho 1221

Study on carbon dioxide gas cooler heat transfer process under supercritical pressures: J. Wang and E. Hihara 1237

Sensitivity analysis of investments in the pulp and paper industry: M. Karlsson and M. Söderström 1253

Optimization of multiple-module thermoelectric coolers using artificial-intelligence techniques: K. Chen and G. T. Lin 1269

VOLUME 26, ISSUE No. 15 December 2002

Eulerian simulations of bubble behaviour in a two-dimensional gas-solid bubbling fluidized bed: L. Huilin, L. Wentie, L. Feng, Z. Guangbo and H. Yurong 1285

Performance prediction of a refrigerating machine using R-407C: the effect of the circulating composition on system performance: P. Haberschill, L. Gay, P. Aubouin and M. Lallemand 1295

Fuzzy controlled central heating system: F. Mendi, K. Boran and M. K. Kulekci 1313

A zero ODP replacement for R12 in a centrifugal compressor: an experimental study using R134a: C. Aprea 1323

Energy use in controlled temperature marine aquaculture: W. Jayatissa, C. Davis, G. Carrington and G. Chen 1333

Inter-particle contact heat transfer in soil systems at moderate temperatures: V. R. Tarnawski, W. H. Leong, F. Gori, G. D. Buchan and J. Sundberg 1345

AUTHOR INDEX 1359

KEYWORD INDEX 1361